In the Specification:

Please replace the paragraph beginning on page 15, line 13 with the following:

The phase error detection circuit 233 calculates the phase error (PE) of the clock signal based on the following equation:

$$\cancel{PE = (Y_t - Y_{t-1}) \times hat_{t-1, t-2} - (Y_{t-1} - Y_{t-2}) \times hat_{t, t-1}}\ \underline{PE = (Y_t - Y_{t-1}) \times hat_{t, t-1} - (Y_{t-1} - Y_{t-2}) \times hat_{t-1, t-2}}$$

where $hat_{t, t-1} = 1, 0, -1$ in the cases of $Y_t - Y_{t-1} > 0$, $Y_t - Y_{t-1} = 0$, $Y_t - Y_{t-1} < 0$, respectively, and $hat_{t-1, t-2} = 1, 0, -1$ in the cases of $Y_{t-1} - Y_{t-2} > 0$, $Y_{t-1} - Y_{t-2} = 0$, $Y_{t-1} - Y_{t-2} < 0$, respectively.

Please replace the paragraph beginning on page 15, line 30 with the following:

The first sampled value Yt and the second sampled value Yt-1 set in the FF 331 are input to the subtracter 333, which subtracts Yt-1 from Yt to calculate a first difference. At the same time, the second sampled value Yt-1 set in the FF 331 and the third sampled value Yt-2 set in the FF 332 are input to the subtracter 334, which subtracts Yt-2 from Yt-1 to calculate another first difference. The first difference calculated by the subtracter 333 is output to the code determination circuit 335. The code determination circuit 335 determines the ternary code for the first difference calculated by the subtracter 333, or determines hatt, t-

1, and outputs hatt, t-1 to the multiplier ~~338~~ 337. Simultaneously, the first difference calculated by the subtracter 334 is output to the code determination circuit 336. The code determination circuit 336 determines the ternary code for the first difference calculated by the subtracter 334, or determines hatt-1, t-2, and outputs hatt-1, t-2 to the multiplier ~~337~~ 338. The product of Yt-Yt-1 and hatt-1, t-2 calculated by the multiplier 337 and the product of Yt-1-Yt-2 and hatt, t-1 calculated by the multiplier 338 are output to the subtracter 339. The subtracter 339 finally determines the phase error of the clock signal from the above equation. In other words, the subtracter 339 uses the absolute values of the two first differences, which are calculated by multiplying each of the two first differences by the ternary code "hat" to correct the transition direction, so as to calculate the difference between the two absolute values from the above equation (a second difference), which is equal to the phase error of the clock signal.

Please replace the paragraph beginning on page 16, line 27 to page 17, line 9 with the following:

FIG. 5 shows a waveform of a readout signal R before being supplied to the Viterbi detection module 100 so as to illustrate the phase error determined from the above equation. The readout signal R is sampled in synchronism with the clock signal to provide sampled values Y. The ideal sampling of the readout signal R is performed by generating the clock signal at the sampling instants t, t-1 and t-2 corresponding to the lower peak, the center point and the upper peak, respectively, of the waveform, shown circled in FIG. 5. If the

readout signal R is sampled at the ideal sampling instants t, t-1 and t-2, the phase error (PE) is given by the above formula as follows:

$$\cancel{PE = (Y_t - Y_{t-1}) \times hat_{t-1,t-2} - (Y_{t-1} - Y_{t-2}) \times hat_{t,t-1}}$$
$$\cancel{= (-1) \times (-1) - (-1) \times (-1)}$$
$$\cancel{= 1 - 1}$$
$$\cancel{= 0}$$

$$\underline{PE = (Y_t - Y_{t-1}) \times hat_{t,t-1} - (Y_{t-1} - Y_{t-2}) \times hat_{t-1,t-2}}$$
$$\underline{= (0-1) \times (-1) - (1-2) \times (-1)}$$
$$\underline{= 0}$$

Please replace the paragraph beginning on page 17, line 21 with the following:

Suppose that $Y_T = 0.1$, $Y_{T-1} = 0.7$ and $Y_{T-2} = 1.9$, the phase error (PE) is given by the above equation as follows:

$$\cancel{PE = (Y_t - Y_{t-1}) \times hat_{t-1,t-2} - (Y_{t-1} - Y_{t-2}) \times hat_{t,t-1}}\ \underline{PE = (Y_t - Y_{t-1}) \times hat_{t,t-1} - (Y_{t-1} - Y_{t-2}) \times hat_{t-1,t-2}}$$

$$= (0.1 - 0.7) \times (-1) - (0.7 - 1.9) \times (-1)$$
$$= 0.6 - 1.2$$
$$= -0.6$$

Please replace the paragraph beginning on page 17, line 32 with the following:

It is concluded from the above calculation result that the clock signal lags

behind by the phase error of 0.6. Consequently, the phase of the clock signal is controlled so as to correct the above phase error. According to the above example, the phase error is calculated with respect to the falling edge portion including the center point. On the other hand, the phase error can also be calculated with respect to a rising edge portion including a center point, or to an edge portion including an upper or a lower peak. The first differences Y_t-Y_{t-1} and Y_{t-1}-Y_{t-2}, that is, the differences between the real sampled values, are multiplied by the ternary codes ~~$hat_{t-1, t-2}$ and $hat_{t, t-1}$~~ $hat_{t, t-1}$ and $hat_{t-1, t-2}$, respectively, to correct the transition direction. As a result, the absolute values of the first differences are determined so that the phase error can correctly be calculated based on the first differences irrespective of the sampling instants at which the readout signal is sampled. The difference of the absolute values of the first differences is determined from the above equation as the second difference, which is employed as the phase error to control the phase compensation.